IN THE U.S. PATENT AND TRADEMARK OFFICE

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Applicant:	Ramesh Nagarajan et al.
Group Art Unit:	2613
Examiner:	Nathan M. Curs
Title:	CONNECTION SETUP STRATEGIES IN OPTICAL TRANSPORT NETWORKS
Attorney Docket:	129250-002056/US

APPLICANTS'/APPELLANTS' BRIEF ON APPEAL (Corrected)

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TABLE OF CONTENTS

APPELLANTS' BRIEF ON APPEAL

I. REAL PARTY IN INTEREST:

The real party in interest in this appeal is Lucent Technologies Inc. Assignment of the application was submitted to the U.S. Patent and Trademark Office and recorded at Reel 012193, Frame 0449.

II. RELATED APPEALS AND INTERFERENCES:

There are no known appeals or interferences that will affect, be directly affected by, or have a bearing on the Board's decision in this Appeal.

III. STATUS OF CLAIMS:

Claims 1 and 3-17 are pending in the application, with claims 1, 9, 10, 11 and 17 being written in independent form.

Claims 1, 3-7, 9-15 and 17 remain finally rejected under 35 U.S.C. §102(a) and claims 8 and 16 remain finally rejected under 35 U.S.C. §103(a). **Claims 2 and 18-21 have been cancelled. Claims 1 and 3-17 are being appealed.**

IV. STATUS OF AMENDMENTS:

A Request for Reconsideration ("Request") was filed on January 5, 2007. In an Advisory Action dated February 1, 2007 the Examiner stated that the Request was considered but did not place the application in condition for allowance.

V. SUMMARY OF CLAIMED SUBJECT MATTER:

(i). Overview of the Subject Matter of the Independent Claims

The present invention is directed at reducing the connection set-up time needed to form a link between nodes in a communication network. More specifically, independent claim 1 reads as follows (specification citations follow in parenthesis):

1. A method for use in a node of a network during a connection setup between a source node and a destination node, the method comprising the steps of:

initiating a cross-connect with an adjacent node;

at substantially the same time as the cross-connect is initiated, sending a connection setup message to a next node before the cross-connect is completed.

(see specification, paragraphs [22], [23], [27] and [29-33], for example)

6. A method for use in a node of a network during a connection setup between a source node and a destination node, the connection setup comprising a forward pass of signaling messages from the source node to the destination node and a reverse pass of signaling messages from the destination node to the source node, the method comprising the steps of:

initiating a cross-connect with an adjacent node on the forward pass of the connection setup;

at substantially the same time as the cross-connect is initiated, sending a connection setup message to a next node; and

checking if the cross-connect was successful on the reverse pass of the connection setup.

(see specification, page 3, line 34 to page 4, line 5; page 4, lines 31-33 and page 6, lines 14-19, for example)

9. A method for use in a node of a network during a connection setup between a source node and a destination node, the method comprising the steps of:

sending a connection setup message to a next node at substantially the same time as a cross-connect is initiated; and

performing the cross-connect with a downstream node prior to receipt of a signaling message related to a status of at least one cross-connect operation performed at another downstream node.

(see specification, page 3, line 34 to page 4, line 5; page 4, lines 31-33 and page 6, lines 14-19, for example).

10. A method for use in a node of a network during a connection setup between a source node and a destination node, the method comprising the steps of:

sending a connection setup message to a next node from an upstream node at substantially the same time as a cross-connect is initiated; and

responsive to the received connection setup message, executing a cross-connect with a downstream node.

(see specification, page 3, line 34 to page 4, line 5; page 4, lines 31-33 and page 6, lines 14-19, for example).

11. Apparatus comprising:

a communications interface for providing signaling to a downstream node and for receiving signaling from an upstream node; and

a processor, responsive to receipt of a connection setup message, sent from the upstream node at substantially the same time as a cross-connect is initiated.

(see specification, page 3, line 34 to page 4, line 5; page 4, lines 31-33; page 6, lines 14-19; and page 9, line 31 to page 10, line 4, for example).

17. Apparatus comprising:

a communications interface for receiving signaling, sent from an upstream node at substantially the same time as a cross-connect is

initiated,_ at the upstream node on a forward pass of a connection setup and receiving signaling from a downstream node on a reverse pass of the connection setup; and

a processor for initiating a cross-connect with the downstream node on the forward pass, and for checking if the cross-connect was successful on the reverse pass.

(see specification, page 3, line 34 to page 4, line 5; page 4, lines 31-33; page 6, lines 14-19; and page 9, line 31 to page 10, line 4, for example).

In order to make the overview set forth above concise the disclosure that has been included, or referred to, above only represents a portion of the total disclosure set forth in the Specification that supports the independent claims.

(ii). The Remainder of the Specification Also Supports the Claims

The Appellants note that there may be additional disclosure in the Specification that also supports the independent and dependent claims. Further, by referring to the disclosure above the Appellants do not represent that this is the only evidence that supports the independent claims nor do Appellants necessarily represent that this disclosure can be used to fully interpret the claims of the present invention. Instead, this disclosure is an overview of the claimed subject matter.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL:

Appellants seek the Board's review and reversal of the rejection of claims 1, 3-7, 9-15 and 17 under 35 U.S.C. §102(a) based on an article authored by Wei et al. (hereinafter "Wei") and claims 8 and 16 under 35 U.S.C. §103(a) based on Wei in view of an article by Qiao et al. ("Qiao").

VII. ARGUMENTS:

A. The Section 102 Rejections

Claims 1, 3-7, 9-15 and 17 were rejected under 35 U.S.C. §102(a) based on an article authored by Wei et al. (hereinafter "Wei"). Appellants disagree for at least the following reasons.

Each of the claims of the present invention includes the feature of, among other things, sending a connection setup message to a next node *at substantially the same time as a cross-connect is initiated.*

In contrast, Wei appears to send a SETUP message after a cross-connect is initiated (e.g., after a time period, t_p).

In the Final Office Action the Examiner appears to take the position that the time period, t_p, in Wei is unrelated to a cross-connect. Instead, the Examiner prefers the time period t_c. However, both t_p and t_c are related to cross-connects.

In Figure 4 of Wei, a cross-connection SETUP message is sent by a "source" and is received at a first intermediate node. After a time period t_p has elapsed, the SETUP message is sent from the first node to the next hop node where the process is repeated (i.e., t_p elapses before the SETUP message is forwarded onward). From Figure 4, the time period t_p is depicted as being a part of the cross-connection setup process at each intermediate node between the source and destination node. Thus, it cannot be said that Wei discloses the sending of a connection setup message to a next node at substantially the same time as a cross-connect is initiated because Wei's SETUP messages are sent only after a time period t_p, associated with the cross-connection setup process, has elapsed.

The Examiner describes the time period t_p as a "protocol messaging processing time". This is indeed the name given to this time period by Wei. However, the processing that occurs during t_p is related to the cross-connection

process. The fact that a cross-connect that is set up may be "cut-through" during a separate time period t_c that follows t_p does not detract from the fact that the cross-connect was initiated upon receipt of an initial SETUP message and processed during a time period t_p.

The Examiner also cites to pages 2023 and 2025 of Wei (see page 6 of Final Office Action). With respect to the text on these pages, the Examiner states that text on these pages demonstrates that "cross-connect *setup* is disclosed as happening in parallel with the next hop propagation". However, cross-connect setup includes much more than cross-connect initiation; the latter is the claimed invention, the former is Wei. Said another way, the fact that Wei may disclose the forwarding of a SETUP message sometime during the time when a cross-connect is being set up is not akin to the claimed inventions, where setup messages are sent substantially at the same time as a cross-connect is *initiated*. As the Examiner can appreciate, the difference in time between a system that sends a SETUP message upon cross-connect initiation and one that waits at each node for a time period (e.g., t_p) to elapse may be substantial considering the distance between nodes or the number of nodes involved.

Further, Appellants again point out page 2029 to the Examiner. While pages 2023 and 2025 provide more of an overview of Wei's disclosed methods (and thus, may be ambiguous), page 2029 appears to provide more specific information. On this page, Wei states that "the WDM switch [i.e., node] reserves the wavelength on the output port, proceeds to make the actual cross-connect by issuing a command to the fabric controller, and forwards the SETUP message to the next hop." Thus, in the most specific explanation given by Wei it appears that a cross-connect is substantially completed before a set up message is forwarded onward.

Considering all of Wei's statements together, and presuming that each must be reconciled with the other (or else Wei is inconsistent), the Appellants

respectfully submit that Wei discloses the sending of a SETUP message sometime after a cross-connect has been initiated, processed or made; not substantially at the same time a cross-connect is initiated.

Because Wei does not disclose each and every feature of claims 1, 3-5, 9-15 and 17 Wei cannot anticipate the subject matter of these claims under 35 U.S.C. §102(a).

Accordingly, Appellants respectfully request that the members of the Board reverse the decision of the Examiner, withdraw the rejections and allow claims 1, 3-7, 9-15 and 17.

B. The Section 103 Rejections

Claims 8 and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Wei in view of an article by Qiao et al. ("Qiao"). Appellants respectfully disagree for at least the following reasons.

Claims 8 and 16 include the use of in-band signaling to initiate cross-connections. The Examiner's position notwithstanding, Wei appears to be directed solely at out-of-band signaling, not in-band signaling. Further, the excerpt from Wei referred to by the Examiner briefly mentions a generalized form of in-band signaling (not the claimed in-band signaling or anything suggestive of the claimed in-band signaling), a form that Wei does not make use of in any event. To overcome this deficiency in Wei, the Examiner relies on Qiao.

After reading Qiao, especially page 26, section 2, the Appellants do not find any mention of in-band signaling.

In more detail, though the Examiner acknowledges that Qiao does not use the terms "in-band signaling", the Examiner takes the position that Qiao nonetheless is directed at such signaling because its techniques involve "control information traveling along with the data" (page 7 of the Final Office Action). However, the text from page 26 of Qaio actually states that a "data

burst follows the control packet after an offset time, T". Thus, the word "after" in the text relates to time, not the same channel.

Accordingly, Appellants respectfully submit that the members of the Board reverse the decision of the Examiner, withdraw the rejections and allow claims 8 and 16.

Conclusion:

Appellants respectfully request that members of the Board reverse the decision of the Examiner and allow claims 1 and 3-17.

The Commissioner is authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 50-3777 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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VIII. CLAIMS APPENDIX

1. A method for use in a node of a network during a connection setup between a source node and a destination node, the method comprising the steps of:

initiating a cross-connect with an adjacent node;

at substantially the same time as the cross-connect is initiated, sending a connection setup message to a next node before the cross-connect is completed.

2. (Cancelled).

3. The method according to claim 1, wherein the network is an optical transport network.

4. The method according to claim 3, wherein the cross-connect is selected from a group consisting of an electrical-based cross-connect and a transparent wavelength-based optical cross-connect.

5. The method according to claim 1, wherein the connection setup is selected from the group consisting of a wavelength-based connection setup, a SONET-based connection setup, a SDH-based connection setup, and a PDH-based connection setup.

6. A method for use in a node of a network during a connection setup between a source node and a destination node, the connection setup

comprising a forward pass of signaling messages from the source node to the destination node and a reverse pass of signaling messages from the destination node to the source node, the method comprising the steps of:

initiating a cross-connect with an adjacent node on the forward pass of the connection setup;

at substantially the same time as the cross-connect is initiated, sending a connection setup message to a next node; and

checking if the cross-connect was successful on the reverse pass of the connection setup.

7. The method according to claim 6, wherein the forward pass and reverse pass of signaling messages occurs out-of-band.

8. The method according to claim 6, wherein the forward pass and reverse pass of signaling messages occurs in-band.

9. A method for use in a node of a network during a connection setup between a source node and a destination node, the method comprising the steps of:

sending a connection setup message to a next node at substantially the same time as a cross-connect is initiated; and

performing the cross-connect with a downstream node prior to receipt of a signaling message related to a status of at least one cross-connect operation performed at another downstream node.

10. A method for use in a node of a network during a connection setup between a source node and a destination node, the method comprising the steps of:

sending a connection setup message to a next node from an upstream node at substantially the same time as a cross-connect is initiated; and

responsive to the received connection setup message, executing a cross-connect with a downstream node.

11. Apparatus comprising:

a communications interface for providing signaling to a downstream node and for receiving signaling from an upstream node; and

a processor, responsive to receipt of a connection setup message, sent from the upstream node at substantially the same time as a cross-connect is initiated.

12. The apparatus according to claim 11, wherein the upstream node and the downstream node are in an optical transport network.

13. The apparatus according to claim 12, wherein the cross-connect is selected from the group consisting of an electrical-based cross-connect and a transparent wavelength-based optical cross-connect.

14. The apparatus according to claim 11, wherein the connection setup is selected from the group consisting of a wavelength-based connection

setup, a SONET-based connection setup, a SDH-based connection setup, and a PDH-based connection setup.

15. The apparatus according to claim 11, wherein the signaling occurs out-of-band.

16. The apparatus according to claim 11, wherein the signaling occurs in-band.

17. Apparatus comprising:

a communications interface for receiving signaling, sent from an upstream node at substantially the same time as a cross-connect is initiated, at the upstream node on a forward pass of a connection setup and receiving signaling from a downstream node on a reverse pass of the connection setup; and

a processor for initiating a cross-connect with the downstream node on the forward pass, and for checking if the cross-connect was successful on the reverse pass.

18. (Cancelled).

19. (Cancelled).

20. (Cancelled).

21. (Cancelled).

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.